

**REMARKS**

Claims 16-17, 19-25, 41, 43-48, 49-54, 64, 66-70, 72-79, 83-96, 100-104, 108-112, 114-120, 122-124, and 126-129 are pending. Claims 133 and 125 are currently canceled. Claims 64, 70, 89, 92, 111, 122, and 126 have been amended. Reconsideration of the application is requested.

The Oath/Declaration has been held to be defective "because the error which is relied upon to support the reissue application is not an error upon which a reissue can be based." The Examiner contends that "the very limitations [the sealing surface that contacts the flap at the root end having a fixed curvature] that are to be removed from the claims of this application are what were added by applicant during prosecution of the original patent in order to overcome an applied rejection." In a similar vein, claims 41, 43, 46, 64, 66, and 69 have been rejected under 35 USC § 251 for being "an improper recapture of broadened claim subject matter surrendered in the application for patent upon which the present reissue is based.

Applicant respectfully submits that neither the objection to the Oath or Declaration nor the rejection under § 251 can be properly sustained. Application of the recapture rule requires examining the following components: (1) whether and in what respect the reissue claims are broader than the original patent claims; (2) whether these broader aspects relate to surrendered subject matter; and (3) whether the reissue claims were materially narrowed in other respects so as to avoid the recapture rule<sup>1</sup>. An examination of each of these elements demonstrates that recapture estoppel is not applicable to the presently-pending claims.

**(1) Are the reissue claims broader than the original patent claims?**

In determining whether the reissue claims are broader than the original patent claims, we examine whether the reissue claims do not include a limitation that is present in the original patent claims. If this is the case, then the claim is broader in that respect. Under the present record, the reissue claims are broader than the original patent claims in that they do not include the curved seal surface limitation. In this regard, the Examiner is correct: the original claims are broader to the extent that they do not include the curved seal surface limitation.

**(2) Do the broader aspects relate to surrendered subject matter?**

Reissue claims may not be "broader than the original patent claims in a manner directly pertinent to the subject matter surrendered during prosecution".<sup>2</sup> In determining whether the applicant surrendered the particular subject matter that would constitute a recapture estoppel bar, "we look to the prosecution history for *arguments* and changes to the claims made in an effort to overcome a prior art rejection."<sup>3</sup> In order to rely on an argument to establish recapture estoppel, there be a "clear and unmistakable surrender."<sup>4</sup> If there is no clear and unmistakable surrender by argument, there then must be evidence of a "deliberate withdrawal or amendment in order to secure the patent".<sup>5</sup> The recapture rule cannot apply when there is no evidence that the amendment of the "originally filed claims was in any sense an admission that the scope of the claim was in not in fact patentable".<sup>6</sup>

In prosecuting the original patent, the applicant did not make any arguments pertinent to the inclusion of the curved seal surface limitation. The record does not contain any statements by applicant, which argued for the patentability of the claims based on the curved seal surface limitation. On page 7 of the Office Action, the Examiner, however, contends that "it is clear" that the added language was "relied on during prosecution" to secure "allowability" of the original application. Simply stating that the record "is clear" does not, however, make it so. In fact, the record relied upon by the Examiner in support of this position establishes the exact opposite. On pages 3 and 4 of the most recent Office Action, the Examiner cites a statement made in an Amendment filed June 12, 1997 in attempting to show that the applicant argued for patentability based on the curved seal surface limitation:

This second Draft apparently was agreed upon by reason that a formal amendment dated June 12, 1997 in an effort to overcome prior art applied in the final rejection dated April 29, 1997, and further modifying the first Draft version of claim 12, applicant specifically amended then claim 12 by the specific addition of (added material indicated by underlining) the following:

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<sup>1</sup> *Panno v. Storz Instruments, Inc.*, 258 F.3d 1366, 59 USPQ2d 1597 (Fed. Cir. 2001); *Hestor Indus. Inc. v. Stein Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998).

<sup>2</sup> *In re Clement*, 131 F.3d 1464, 1468, 45 USPQ2d 1161, 1164 (Fed. Cir. 1997).

<sup>3</sup> *Hestor Indus.* 46 USPQ2d at 1648 (emphasis theirs).

<sup>4</sup> *Medtronic Inc. v. Guidant Corp.*, 465 F.3d 1360, 80 USPQ2d 1558, 1568 (Fed. Cir. 2006).

<sup>5</sup> *Id.*

<sup>6</sup> *Seattle Box Co. Inc. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 825 221 USPQ 568, 574 (Fed. Cir. 1984).

"said root end of the cantilevered flexible flap and the respective sealing surface that contacts the cantilevered flexible flap at its said root end are curved in a direction transverse of said longitudinally axis, said transverse curvature biases the flap and maintains it substantially in contact..."

Which includes the language applicant now requests to remove. On page 6 of the accompanying remarks concerning the rejection of claim 12 and how as amended the claim does not read on the applied reference applicant states:

"...independent claims 12 and 13 have been drafted to more fully define the form of, and relationship between, the valve flap and the cooperating valve seat."

After further changes to claim 12, directed to language not germane to the concept of having the sealing surface curved in the transverse direction, claim 12 matured into claim 1 of the Patent sought to be Reissued. Thus the limitations added to the claims and/or argued about to make the claim patentable over the applied prior art effectively "generates" the surrender of the claimed subject matter.

Please note that the Examiner's position reproduced above shows that the statement relied on indicates that the claim amendment was not made to overcome prior art. A claim amendment made to "more fully define the form of, and relationship between, the valve flap and the cooperating valve seat" is not an argument to distinguish prior art. As reproduced above, there also were other limitations added to the claim at that time — namely, the transverse curvature to the flap. Further, an attempt to clarify claim language is not an admission that the claim was amended to establish patentability. Thus, the record cited by the Examiner does not demonstrate that the applicant made arguments pertinent to the curved seal surface limitation to overcome prior art.

In the absence of any arguments directed to the curved seal surface claim feature to establish patentability, there can be no recapture estoppel unless there is evidence "that [the] amendment of the originally filed claims was any sense an admission that the scope of the claim was not in fact patentable."<sup>7</sup> Because the applicant only spoke in general terms when discussing the various claim changes and because the amendment at issue was made "to more fully define"

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<sup>7</sup> *Mentor Corp. v. Coloplast Inc.*, 27 USPQ2d 1521, 1524.

the relationship between the valve parts, there is nothing that would allow a fact finder to determine that there was an admission that the original claim was not patentable. The amendment for the curved seal surface limitation could have been made because of the attorney's failure to appreciate the full scope of the invention. This type of defect in a patent "has been found to be sufficient to justify a patent reissue".<sup>8</sup> In the present context, the Examiner has only speculated as to why the particular amendment may have been made. Such speculation does not constitute a "clear and unmistakable" surrender argument by applicant. Nor does it show that the subject matter added to the claims "was deliberately surrendered in an effort to overcome a prior art rejection."<sup>9</sup> The prosecution history reveals that applicant's attorney distinguished the pending claims from the prior art on other grounds. Under such circumstances, it cannot be properly held that the applicant made a clear and unmistakable surrender of the broader claim or a deliberate amendment in order to secure the patent. Thus, element (2) of the recapture analysis has not been satisfied. The objection to the defective oath and the § 251 rejection must be withdrawn for this reason alone.

**(3) Have the reissue claims been materially narrowed in other respects?**

Reissue claims that are broader in certain respects and narrower in others may also avoid the effect of the recapture rule.<sup>10</sup> Thus, even if the Examiner was correct in contending that the applicant did make a "clear and unmistakable" surrender or did "admit that the claim was not patentable" without the curved seal surface limitation, the recapture rule could nonetheless be avoided if the reissue claims were sufficiently narrowed despite the broadening aspects of the claims.<sup>11</sup> The Federal Circuit has stated that "[t]he purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects." In explaining Federal Circuit and CCPA precedent, the Board of Patent Appeals and Interferences in *In re Eggert*<sup>12</sup> has indicated that it is perfectly acceptable for an applicant to reissue a patent for subject matter added to a claim of the original patent application because the focus is on the scope of the claim, not the language removed:

<sup>8</sup> See *Hestor*, 142 F.3d at 1479-80; *Clement*, 131 F.3d at 1468; and *Mentor*, 998 F.2d at 995.

<sup>9</sup> *Medtronic Inc. v. Guidant Corp.*, 465 F.3d 1360, 80 USPQ2d 1558 (Fed. Cir. 2006).

<sup>10</sup> *Clement*, 131 F.3d at 1470, 45 USPQ2d at 1165.

<sup>11</sup> *Ball*, 729 F.2d at 1438, 221 USPQ 296.

<sup>12</sup> 67 USPQ2d 1716 (Bd. Pat. App. & Int. 2003).

This is the underlying policy behind what has come to be known as the "reissue recapture rule." In its simplest terms, this rule may be summarized as follows: A patentee is precluded from recapturing in reissue that which he earlier conceded was unpatentable and abandoned or surrendered, whether by cancellation, amendment or argument of claims, for the purpose of obtaining the original patent.

Accordingly, it seems clear to us that the reissue recapture rule focuses on that which the prosecution history indicates was given up or conceded to be unpatentable by an applicant, i.e., the "surrendered subject matter," in order to obtain a patent, for this is the subject matter which cannot be recaptured in reissue. Indeed, the examiner, appellants and the original panel all appear to be in agreement on this broad principle. The nature of the dispute appears to reside in the manner in which the surrendered subject matter is to be determined.

The examiner contends that the recapture rule prohibits a patentee from obtaining in reissue any claim which does not include each and every limitation added to a claim or argued by an applicant during the prosecution of the original patent application in order to overcome a rejection and obtain a patent, citing *Shepard v. Carrigan*, 116 U.S. 593 (1886); *In re Byers*, 230 F.2d 451, 456-57, 109 USPQ 53, 57 (CCPA 1956)<sup>9</sup> and *Riley v. Broadway-Hale Stores, Inc.*, 217 F.2d 530, 532, 103 USPQ 414, 416 (9th Cir. 1954) as support for this proposition (request, page 10). This approach, while certainly relatively simple in its application, has been expressly rejected by the Court of Customs and Patent Appeals (CCPA) and the Court of Appeals for the Federal Circuit (Federal Circuit).

<sup>9</sup>The examiner's characterization of *Byers* as addressing the issue of patentability of reissue claims of intermediate scope, that is, broader than the patent claim yet narrower than certain canceled claims in the application, is misguided, in that the basis of the holding that reissue claims 2 and 3 were impermissible was the fact that the reissue claims were broader in some respects and *not narrower in any respect* than original claim 20 prior to its amendment. The court emphasized that the rejection was not based on the cancellation of the other broader claims but on the limiting amendment of original claim 20; "[t]he fact that there were other claims whose cancellation did not constitute such a bar is immaterial." *Byers*, 230 F.2d at 456-57, 109 USPQ at 57.

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Federal Circuit then expressly declined to adopt "the rigid standard" applied in *Riley*, namely, "when the chief element added by reissue has been abandoned while seeking the original patent, the reissue is void," in favor of the more liberal approach taken by the CCPA. *Ball* at 1436, 221 USPQ at 294. According to *Ball*,

[t]he recapture rule bars the patentee from acquiring, through reissue, claims that are of the *same* or of *broader scope* than those

claims that were canceled from the original application. On the other hand, the patentee is free to acquire, through reissue, claims that are *narrower* in scope than the canceled claims.

*Id.* at 1436, 221 USPQ at 295. *Ball* also establishes that "[t]he proper focus is on the *scope* of the claims, not on the individual *feature* or *element* purportedly given up during prosecution of the original application." *Id.* at 1437, 221 USPQ at 295. This approach is consistent with the CCPA's determination in *Byers*<sup>10</sup> that the applicant's "action in limiting the scope of original claim 20 by amendment constituted a deliberate withdrawal of that claim as originally presented, in order to obtain a patent, and that such withdrawal is a bar to the obtaining by reissue of claim 20 as it originally stood, or of any claim differing therefrom only by being broader."<sup>11</sup> The importance of focusing on the scope of the claims in determining whether a reissue claim is impermissible under the recapture rule is also emphasized in *In re Willingham*, 282 F.2d 353, 356, 127 USPQ 211, 215 (CCPA 1960), wherein it was pointed out that "the issue before us is not the issue presented in many reissue cases in which an applicant cancels a claim to secure the issuance of the patent and then seeks to recapture it by a claim of the same scope in a reissue application."

<sup>10</sup> 230 F.2d at 456, 109 USPQ at 56

<sup>11</sup> It is noteworthy that the CCPA identified the surrendered subject matter which cannot be recaptured in reissue as the claim "as originally presented" prior to the amendment, as distinguished from *any* claim not containing the limitation added to obtain allowance.

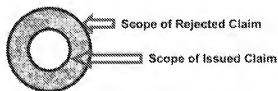
In each of the independent claims presented in the present reissue application, there are narrowing features pertinent to the flexible flap, its mounting, and its transverse curvature. A number of these added limitations have been previously identified in applicant's response filed May 29, 2008. The claims pending in this application are set forth in the Appendix to this Amendment. The underlining required for claims in a reissue application has been removed. Applicant has included underlining and strike-through for the language added and canceled in this Amendment, respectively. Further, italics has been provided to illustrate examples of narrowing claim language that is pertinent to the flexible flap, its mounting to the seal surface, and its curved configuration. These italicized limitations are pertinent to the removed curved seal surface limitation because that limitation was similarly relevant to providing the transverse curvature to the flap through its mounting at the stationary portion of the flap.

The Examiner properly recognizes applicant's argument regarding the inclusion of narrowing language but nonetheless still refuses to withdraw the rejection under § 251. In

maintaining the rejection, the Examiner states that *Eggert* does not allow the complete removal of the previously-added language:

It is understood that *Eggert* allows in Reissue applications for the broadening of claim language germane to the limitations that were added/argued during prosecution of the Patent application to overcome an art rejection. *Eggert* does not permit the complete removal of such language.

As recited above, however, the proper focus of evaluating whether the recapture estoppel exists is on the scope of the claims, not the removal of the claim language. What *Eggert* does not allow is the pursuit of claims having the original scope. In fact, *Eggert* provides a ven diagram to highlight this point:



**Drawing 1**

*Eggert* states that an applicant is not entitled to achieve claim scope of the outer ring but is entitled to obtain claim scope of the shaded area between the inner and outer rings:

As illustrated in Drawing 1, the scope of rejected claim 1 (once amended) is the outer circle and the scope of amended issued claim 1 (twice amended) is the inner circle. The shaded area between the circles represents subject matter which is only narrower than the scope of the rejected claim but only broader than the scope of the issued claim. In our view, the surrendered subject matter is the outer circle of Drawing 1 because it is the subject matter appellants conceded was unpatentable. The subject matter of the shaded area was not subject to the administrative examination process as the examiner was never directly presented with a claim which fell within the scope of the shaded area. Thus, appellants have never conceded that a claim falling within the scope of the shaded area of Drawing 1 is unpatentable and therefore, in our view, such subject matter is not barred by the recapture rule.<sup>13</sup>

Thus to state that the applicant cannot completely remove the added language is in error. An applicant can remove such language so long as the other added language is pertinent to the

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<sup>13</sup> 67 USPQ2d at 1717.

subject matter of the prior rejection.<sup>14</sup> In the present reissue application, the applicant has not simply removed the language that had been previously added to the claim to prosecute a claim having the original claim scope. What applicant has done is remove the language pertinent to the curved seal surface limitation and added additional language regarding how the flap curvature may be achieved. It was the transverse curvature of the flap that the applicant argued as a distinguishing feature during prosecution of the original patent application claims. Applicant's newly-added language is germane to the language of the prior rejection since the added language is pertinent to the transverse curvature of the flap and its mounting to the valve seat. Under the Examiner's restricted view, the added language has to be so precisely related to the removed language that there is essentially no room for establishing a broader claim relative to the granted claim. Such a position is akin to the *per se* rule previously rejected by the Board of Patent Appeals and the Federal Circuit.<sup>15</sup>

In short, the record does not present any evidence that applicant argued for patentability based on the curved seal surface limitation. Applicant also has not made any admission that such language was added to the claim to secure patentability. Additionally, even if such an argument or an admission was made, applicant has included narrowing language in the claim that is germane to the language previously added to overcome a prior art rejection. That is, the inclusion of additional limitations pertaining to the transverse curvature of the valve flap would preclude the effect of the recapture estoppel rule.

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<sup>14</sup> *Clement*, 131 F.3d at \_\_\_, 45 USPQ2d at 1165 ("If the reissue claim is narrower in an aspect germane to prior art rejection, and broader in an aspect unrelated to the rejection, the recapture rule does not bar the claim.").

<sup>15</sup> See *Eggert*, 67 USPQ2d at 1717 (As illustrated in Drawing 1, the scope of rejected claim 1 (once amended) is the outer circle and the scope of amended issued claim 1 (twice amended) is the inner circle. The shaded area between the circles represents subject matter which is only narrower than the scope of the rejected claim but only broader than the scope of the issued claim. In our view, the surrendered subject matter is the outer circle of Drawing 1 because it is the subject matter appellants conceded was unpatentable. The subject matter of the shaded area was not subject to the administrative examination process as the examiner was never directly presented with a claim which fell within the scope of the shaded area. Thus, appellants have never conceded that a claim falling within the scope of the shaded area of Drawing 1 is unpatentable and therefore, in our view, such subject matter is not barred by the recapture rule.).



**§ 251 Rejections**

Claims 47, 49-54, 64, 66-70, 72-79, 83-96, 100-104, 108-120, and 122-129 have been rejected under 35 USC § 251 for being based upon new matter added to the patent for which reissue is sought.

In claim 47, the Examiner contends that the language "a portion of the stationary portion [to] reside in non-alignment with the seal surface...is considered to be new matter." Applicant respectfully disagrees with this position. Figure 4 of Bowers clearly shows that there is a portion of the stationary portion of the flap that resides in non-alignment with the seal surface. The post 16 pushes down upon the flap 7 to cause it to be non-aligned with the seal surface.

Claim 64 also has been rejected for containing new matter. The Examiner asserts that the recitation "non-centrally" encompasses embodiments in which the valve is mounted not at the center of the valve and not at the edge of the flap as described in the specification. Applicant has amended claim 64 to eliminate any issue with respect to the new matter rejection. The claim now specifies that the flexible flap is mounted non-centrally at a root end of the flap.

Claim 70 has been similarly rejected. To eliminate this issue, the applicant has amended this claim to specify that the flap is mounted off-center relative to the longitudinal axis of the flap towards the stationary segment of the flap's peripheral edge.

Claim 86 also has been rejected for including new matter. In this instance, the Examiner contends that the words "at least" in the phrase "to cause the flexible flap to exhibit a curvature at least in a direction transverse to the longitudinal axis" constitutes new matter. In making this rejection, the Examiner states that the claim includes "curvature and directions not transverse to the longitudinal axis such as along a skew angles along the longitudinal axis which is outside the scope of the original patent." Please note that applicant's specification indicates that the curvature may be in the transverse direction and in the longitudinal direction. As such, there will also be inherent curvatures and angles therebetween. Accordingly, the language "at least" does not cause the claim to include new matter.

Applicant has amended claim 89 to eliminate the issue raised with respect to the language "accomplished at least" by replacing that phrase with the word --assisted--. A similar amendment has been made to claim 92.

Claim 95 has been rejected for including new matter because the language "at least in part encompasses embodiments of the invention in which the force is applied by a structure not disclosed in the Patent." In making this rejection, the Examiner contends that "[t]he only element which exerts a force to move the flap upstream is block 16." Applicant takes issue with this position. There are additional features of the valve that also help or assist in maintaining the flap in a curved position. For example, the seal surfaces and the relationship between the seal surfaces 9a, 9b, 9c and the block 16 also assist in imparting the curvature to the flap. Thus, the applicant is correct in stating that the fixed curvature results at least in part from a force being applied at a position proximate the root end and between the peripheral side edges.

In rejecting independent claims 104, 111, 120, and 122, the Examiner has indicated that the recitation "at least in part" encompasses embodiments of the invention where the "force" is applied by structure not disclosed in the patent. As indicated above, there are other components other than the block that contribute to the force and the resultant flap curvature. For example, the seal surfaces and their spatial relationship to the block also contribute to the flap curvature. Thus, applicant believes that these claims are properly worded and that there is no new matter issues.

In regard to claim 125, this claim has been canceled, rendering the issue moot.

In view of the above, applicant believes that this application is in condition to be allowed. Please further examine the pending claims in light of the remarks provided above.

Respectfully submitted,

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Date

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**APPENDIX**

1. – 15. (canceled)

16. (previously presented) An exhalation permitting filter mask assembly for positioning over the mouth and nose of a user, the filter mask assembly comprising:

a mask configured to fit over the nose and mouth of a user and including filter material through which air can be inhaled by a user while effecting filtration of the inhaled air;

a uni-directional valve mounted to the mask for permitting exhalation through the valve while precluding inhalation through the valve;

the valve including a flexible flap having a root end portion, opposite side portions and a free end portion, an upper housing member, an inlet port and a valve seat surrounding the inlet port and being part of the upper housing member and including a sealing surface adjacent the inlet port;

the valve further including a lower housing member that includes a flap-engaging member;

the flexible flap being fixedly mounted at the root end portion relative to the upper housing member in a manner so that the free end portion makes sealing contact with the sealing surface when the flexible flap is closed and so that the free end portion of the flexible flap lifts from contact with the sealing surface and moves outwardly of the sealing surface when exhaled air passes through the inlet port; and

the flexible flap having a transverse curvature extending medially of the flap imparting sufficient stiffening to the flexible flap to maintain the flexible flap in sealing contact with the sealing surface for any orientation of the filter mask during normal operating conditions in the absence of a pressure differential across the flexible flap

*wherein the transverse curvature is imparted to the flexible flap by having the flap-engaging member contact the root end portion of the flexible flap such that the flap is held against the sealing surface of the upper housing member and such that a portion of the flap resides in non-alignment with the sealing surface of the upper housing member when the valve is viewed in a longitudinal section (FIG. 4).*

17. (previously presented) A filter mask assembly as recited in claim 16, wherein the flexible flap is formed of elastomeric material.
18. (canceled)
19. (previously presented) A filter mask assembly as recited in claim 16, wherein the lower housing member faces the upper housing member, and wherein the root end portion of the flexible flap is trapped and fixedly positioned between facing surfaces of the upper housing member and the lower housing member.
20. (previously presented) A filter mask assembly as recited in claim 19, wherein the facing surface of the lower housing member is a curved surface.
21. (previously presented) A filter mask assembly as recited in claim 19, wherein that part of the sealing surface of the valve seat which the free end portion of the flexible flap contacts is a flat surface.
22. (previously presented) A filter mask assembly as recited in claim 19, wherein the sealing surface is provided on a portion of a seal ridge surrounding the inlet port.
23. (previously presented) A filter mask assembly as recited in claim 22, wherein the seal ridge comprises four linear seal ridge members and the facing surface on the lower housing is provided on a profiled block aligned with one of the linear seal ridge members.
24. (previously presented) A filter mask assembly as recited in claim 23, additionally including a second profiled block provided in the lower housing member engaging a central

portion of the flexible flap outwardly of the root end portion to urge the central portion toward the upper housing to enhance the transverse curvature of the flexible flap.

25. (previously presented) A filter mask as recited in claim 16, wherein the filter material comprises at least one sheet incorporating filter material.

26-40. (canceled)

41. (previously presented) A filter face mask comprising:  
a mask body adapted to fit over a nose and a mouth of a wearer; and  
an exhalation valve mounted to the mask body;  
the exhalation valve comprising only one flexible flap and a valve seat;  
the flexible flap being non-centrally mounted to the valve seat relative to the orifice and  
in cantilever fashion for movement between open and closed positions;  
the flexible flap having a longitudinal dimension and a free end that rests upon the valve  
seat when in closed position;  
the flexible flap also having a transverse curvature in a direction transverse to the flap's  
longitudinal dimension;  
the transverse curvature biasing the flexible flap to effect positioning and retention of the  
flexible flap in the closed position in the absence of an opening pressure differential across the  
flap for any orientation of the valve  
*wherein the flexible flap has maximum transverse curvature at the location where the  
flexible flap is mounted to the valve seat.*

42. (canceled)

43. (previously presented) The filter mask of claim 41, wherein the transverse curvature of the flexible flap progressively decreases toward the free end of the flexible flap.

44. (previously presented) The filter mask of claim 41, wherein the transverse curvature is imparted to the flexible flap by virtue of its mounting to the valve seat.

45. (previously presented) The filter mask of claim 44, wherein the flexible flap is mounted to the valve seat by being pressed towards the seat by a member disposed on a valve cover.

46. (previously presented) The filter mask of claim 41, wherein the exhalation valve is so located on the mask such that during normal head movements of a wearer, the free end of the flexible flap is generally directed downwardly.

47. (previously presented) A filter face mask that comprises:

a mask body adapted to fit over a nose and mouth of a wearer for filtering inhalation air;  
and

an exhalation valve mounted to the mask body, the exhalation valve including a flexible flap, a first housing defining a valve seat and including a seal ridge terminating in a seal surface, and a second housing defining a valve cover;

the first housing including one or more inlet ports, the one or more inlet ports being surrounded by the seal ridge;

the second housing including one or more outlet ports and being joined to the first housing;

the flexible flap having only one stationary portion and only one free portion and a peripheral edge that includes both stationary and free segments, the flap also having a longitudinal axis extending in a direction between the free and stationary segments of the flap;

the stationary portion of the flexible flap being held in a stationary position in contact with a portion of the seal ridge such that the stationary segment of the peripheral edge remains stationary during exhalation, and the free portion of the flap being movable during exhalation such that the free segment of the peripheral edge moves away from the seal surface and the free portion of the flap lifts off of the seal surface; and

*the flexible flap having a curvature in a direction transverse to the longitudinal axis, the transverse curvature being imparted to the flexible flap by the mounting of the flexible flap in contact with a portion of the seal ridge, the mounting of the flap causing the stationary portion of the flap to be pressed towards the seal ridge such that at least a portion of the stationary portion resides in non-alignment with the seal surface when viewing the valve in a longitudinal section (FIG. 4); the transverse curvature effecting biasing of the free portion of the flexible flap*

towards the seal surface under neutral conditions so that the flap maintains substantial contact with the seal surface of the valve seat in the absence of exhalatory pressure differential across the flap in any orientation of the valve, while also allowing the free portion of the flexible flap to be lifted from the seal surface during an exhalation.

48. (canceled)

49. (previously presented) The filter face mask of claim 47, wherein the flexible flap is mounted to the valve in cantilever manner by being trapped between respective surfaces on the valve seat and the valve cover.

50. (previously presented) The filter face mask of claim 47, wherein the outlet ports are oriented on the valve cover relative to the flexing of the flexible flap such that exhaled air from a wearer exits the exhalation valve with a downward component that directs the exhalate away from a wearer's eyes.

51. (previously presented) The filter face mask of claim 47, wherein the seal surface has multiple portions that include first and second side portions and a free-end portion, the free segment of the peripheral edge of the flexible flap having a flat configuration above the first and second side portions and the free end portion.

52. (previously presented) The filter face mask of claim 47, wherein the flexible flap's transverse curvature progressively decreases towards an outer end of the free portion of the flexible flap.

53. (previously presented) The filter face mask of claim 47, wherein the valve seat and valve cover are inter-fitting plastic parts.

54. (previously presented) The filter face mask of claim 47, wherein said stationary portion of the flexible flap is permanently configured for embracing a portion of the valve seat.

55-63. (canceled)

64. (currently amended) A filter face mask that comprises:
- (a) a mask body adapted to fit over a nose and a mouth of a wearer; and
  - (b) an exhalation valve mounted to the mask body, the exhalation valve comprising only one flexible flap and a valve seat, the flexible flap being non-centrally mounted to the valve seat relative to the orifice at root end and in cantilever fashion such that it has a longitudinal dimension, the flexible flap also having a free end that rests upon the valve seat when closed, the flexible flap exhibits a curvature in a direction transverse to the flexible flap's longitudinal dimension, the transverse curvature biasing the flexible flap to assist in closing the valve in the absence of an opening pressure differential across the flexible flap, under any orientation of the valve, *wherein the flexible flap has a maximum transverse curvature at the root end location where the flexible flap is mounted to the valve seat.*
65. (canceled)
66. (previously presented) The fluid valve of claim 64, wherein the transverse curvature of the flexible flap decreases in the longitudinal dimension toward a free end of the flexible flap.
67. (previously presented) The filter mask of claim 66, wherein the transverse curvature is imparted to the flexible flap by virtue of its mounting to the valve seat.
68. (previously presented) The filter mask of claim 67, wherein the flexible flap is mounted to the valve seat by being pressed toward the valve seat by a member disposed on a valve cover.
69. (previously presented) The filter mask of claim 64, wherein the exhalation valve is so located on the mask such that during normal head movements of a wearer, the free end of the flexible flap is generally directed downward.
70. (currently amended) A filter face mask that comprises:
- (a) a mask body that is adapted to fit over a nose and mouth of a wearer; and
  - (b) an exhalation valve that is mounted to the mask body, the exhalation valve comprising a flexible flap, a valve seat, and a valve cover, the valve seat comprising one or more inlet ports, which one or more ports are surrounded by a seal surface, the valve cover comprising



one or more outlet ports and being joined to the valve seat, the flexible flap being mounted to the valve seat and having only one stationary portion and only one free portion and a peripheral edge that includes stationary and free segments at opposite ends of a longitudinal axis of the flap, the stationary segment of the flexible flap's peripheral edge being associated with the stationary portion of the flexible flap so as to remain stationary during an exhalation, and the free segment of the flexible flap's peripheral edge being associated with the free portion of the flexible flap so as to be movable during an exhalation, *wherein the flexible flap is mounted off-center such that the stationary portion of the flexible flap is off-center relative to the longitudinal axis of the flap towards the stationary segment of the flap's peripheral edge*, wherein the flexible flap has a transverse curvature in a direction transverse to the longitudinal axis of the flap, *the transverse curvature being accomplished at least in part by having a member from the valve cover press against the flap to create sufficient curvature in the flap at a point where the member contacts the flap to cause at least part of the stationary portion to reside in non-alignment with the seal surface when viewing the flap in a longitudinal section (FIG. 4)*, the transverse curvature of the flexible flap causing a biasing of the free portion of the flexible flap toward the seal surface under neutral conditions while also allowing the free portion of the flexible flap to be lifted from the seal surface during an exhalation.

71. (canceled)

72. (previously presented) The filter face mask of claim 70, wherein the flexible flap is mounted to the valve by being trapped between respective surfaces on the valve seat and the valve cover.

73. (previously presented) The filter face mask of claim 70, wherein the outlet ports are oriented on the valve cover relative to the flexing of the flexible flap such that exhaled air from a wearer exits the exhalation valve with a downward component that directs the exhalate away from a wearer's eyes.

74. (previously presented) The filter face mask of claim 72, wherein the seal surface has multiple portions that include first and second side portions and a free-end portion, the free

segment of the peripheral edge of the flexible flap having a flat configuration above the first and second side portions and the free end portion.

75. (previously presented) The filter face mask of claim 74, wherein the flexible flap's transverse curvature decreases towards the free segment of the peripheral edge of the flexible flap.

76. (previously presented) The filter face mask of claim 75, wherein the flexible flap lies flat against the seal surface that is disposed beneath the free end of the flexible flap.

77. (previously presented) The filter face mask of claim 70, wherein the valve seat and valve cover are inter-fitting plastic parts.

78. (previously presented) The filter face mask of claim 70, wherein the stationary portion of the flexible flap is configured for embracing a member on the valve seat.

79. (previously presented) The filter face mask of claim 70, wherein the exhalation valve is positioned on the mask body and the flexible flap is positioned on the valve seat such that the free portion of the flap resides below the stationary portion when the mask is worn in its normal upright position over the nose and mouth of the wearer.

80-82. (canceled)

83. (previously presented) The filter face mask of claim 79, wherein the transverse curvature comprises an arching of the flap in a dimension transverse to a longitudinal dimension of the flap.

84. (previously presented) The filter face mask of claim 83, wherein the flexible flap also has a curvature in the longitudinal dimension, which curvature is imparted to a central section of the flap.

85. (previously presented) The filter face mask of claim 84, wherein the transverse curvature of the flap decreases in the longitudinal dimension moving from a point where the flap is mounted to the valve seat towards the free segment of the flap's peripheral edge.

86. (previously presented) A filter mask that comprises:

- (a) a mask body that is adapted to fit over the nose and mouth of a person; and
- (b) a unidirectional exhalation valve that is mounted to the mask body to enable exhaled air to exit an interior of the mask body during an exhalation, the unidirectional exhalation valve comprising:

- (i) a cantilevered flexible flap that has a stationary portion and a free portion and has a peripheral edge that includes opposing first and second side edges and opposing stationary and free edges, the stationary and free edges being located at opposing ends of a longitudinal axis of the flap, the first and second peripheral side edges extending between the stationary edge and the free edge,

- (ii) a valve seat having sealing surfaces that contact the cantilevered flexible flap along the stationary and free edges and first and second side edges when the valve is closed; and

- (iii) *a valve cover that has a profiled block that engages the flexible flap at the stationary portion to press the flap towards the valve seat*, wherein the flexible flap exhibits a curvature at least in a direction transverse to the longitudinal axis, the transverse curvature biasing the flap and maintaining the flap in substantially in contact with all the sealing surfaces of the valve seat in the absence of an opening pressure differential across the valve, under any orientation of the valve while also allowing the free edge and at least portions of the peripheral side edges to flex away from the respective sealing surfaces of the valve seat during an exhalation.

87. (previously presented) The filter mask of claim 86, wherein the profiled block engages the flap at a non-central location of the flap in a non-aligned relationship to the sealing surfaces, and wherein the transverse curvature of the flap decreases along the longitudinal axis in a direction going from the location where the profiled block engages the flap towards the free segment of the flap's peripheral edge, and wherein the flap is trapped between respective surfaces on the profiled block and on the valve seat.

88. (previously presented) The filter mask of claim 87, wherein the sealing surfaces have multiple portions that include first and second side portions and a free end portion, the free segment of the peripheral edge of the flexible flap having a flat configuration above the first and second side portions and the free end portion.

89. (currently amended) A filter mask that comprises:

- (a) a mask body; and
- (b) a unidirectional exhalation valve that is secured to the mask body, the unidirectional exhalation valve comprising:

- (i) a flexible flap that has only one stationary portion and only one free portion and that has a peripheral edge that includes a stationary segment and a free segment, the stationary segment being associated with the stationary portion of the flap so as to remain stationary during an exhalation and the free segment of the flap being associated with the free portion of the flap so as to be moveable during an exhalation, the stationary and free segments of the peripheral edge being disposed at opposing ends of a longitudinal dimension of the flap;

- (ii) a valve seat that has at least one port to allow exhaled air to exit the mask body when worn on a person, the valve seat also comprising a seal surface onto which the stationary and free portions of the flap make contact when no fluid is passing through the port(s), the free portion of the flap being capable of being lifted from the seal surface when a wearer exhales to allow exhalate to exit the mask, the seal surface surrounding the port(s) so that when the stationary and free portions of the flap are in contact with the seal surface fluid cannot pass through the port(s) in an opposite direction to enter the mask, the flexible flap having a fixed curvature in the flap in a direction transverse to the longitudinal dimension, *the fixed curvature being assisted accomplished at least in part by exerting a force on the flexible flap to move the flap towards the valve seat such that the flap, at the location where the force is exerted, is non-aligned with the seal surface, wherein the force and the fixed curvature bias the flap towards the seal surface to enable the free portion of the flap to maintain substantial contact with the seal surface under any orientation of the mask when a fluid is not passing through the valve seat port(s).*

90. (previously presented) The filter face mask of claim 89, further comprising a valve cover that has a profiled block extending therefrom, the profiled block engaging the flap so as to create the force.

91. (previously presented) The filter face mask of claim 89, wherein the fixed curvature in a direction transverse to the longitudinal dimension decreases along the longitudinal axis in a direction going from the location where the profiled block engages the flap towards the free segment of the flap's peripheral edge, and wherein the flap is trapped between respective surfaces on the profiled block and on the valve seat.

92. (currently amended) A filter mask that comprises:

(a) a mask body; and

(b) a unidirectional exhalation valve that is secured to the mask body, the unidirectional exhalation valve comprising:

(i) a flexible flap that has a stationary portion and a free portion and that has a peripheral edge that includes a stationary segment and a free segment, the stationary segment being associated with the stationary portion of the flap so as to remain stationary during an exhalation and the free segment of the flap being associated with the free portion of the flap so as to be moveable during an exhalation, the stationary and free segments of the peripheral edge being disposed at opposing ends of a longitudinal dimension of the flap;

(ii) a valve seat that has at least one port to allow exhaled air to exit the mask body when worn on a person, the valve seat also comprising a seal surface onto which the stationary and free portions of the flap make contact when no fluid is passing through the port(s), the free portion of the flap being capable of being lifted from the seal surface when a wearer exhales to allow exhalate to exit the mask, the seal surface surrounding the port(s) so that when the stationary and free portions of the flap are in contact with the seal surface fluid cannot pass through the port(s) in an opposite direction to enter the mask, the flexible flap being mounted to the valve seat in a cantilevered manner, wherein the flap comprises a fixed curvature in a direction transverse to the longitudinal dimension, *the fixed curvature*

*being ~~assisted~~ accomplished at least in part by exerting a force on the flexible flap to move the flap towards the valve seat such that the flap, at the location where the force is exerted, is non-aligned with the seal surface, wherein the fixed curvature and the force bias the flap towards the seal surface to enable the free portion of the flap to maintain substantial contact with the seal surface under any orientation of the mask when a fluid is not passing through the valve seat port(s).*

93. (previously presented) The filter face mask of claim 92, further comprising a valve cover that has a profiled block extending therefrom, the profiled block engaging the flap so as to create the force.
94. (previously presented) The filter mask of claim 92, wherein the flap's peripheral edge has two peripheral side edges located between a stationary end and a free end, wherein the free end and at least portions of the peripheral side edges are freely movable to flex away from portions of the seal surface that the flap would contact when in a closed condition.
95. (previously presented) A filter mask that comprises:
- a mask body that is adapted to fit over the nose and mouth of a person; and
  - a unidirectional exhalation valve that is mounted to the mask body to enable exhaled air to exit an interior of the mask body during an exhalation, the exhalation defining a downstream direction and an opposite upstream direction, the unidirectional exhalation valve comprising:
    - a cantilevered flexible flap and a cooperating valve seat surrounding a valve orifice;
    - the cantilevered flexible flap defining a root end and a free end at opposite ends of a longitudinal axis of the flap, and two peripheral side edges respectively extending between the root end and the free end; wherein the root end, the free end, and the two side edges include upstream and downstream surfaces;
    - the valve seat having sealing surfaces that contact the flap along portions of the upstream surface of the root end, the free end, and the peripheral side edges when the fluid valve is closed;
    - the cantilevered flexible flap being mounted in contact with the respective sealing surface of the valve seat at the root end and being freely movable to flex away from the respective

sealing surface of the valve seat at the free end and along at least portions of the peripheral side edges when fluid flows through the fluid valve and the fluid valve is open; and

wherein the flexible flap comprises a fixed curvature in a direction transverse to the longitudinal axis, *the fixed curvature resulting at least in part from a force being applied to the flap at a position proximate the root end and between the peripheral side edges, the applied force moving the flap upstream at the applied position and thus at least partially imparting the curvature*, the curvature resulting in maintaining the flap substantially in contact with the sealing surfaces of the valve seat in the absence of an opening pressure differential across the flap, in any orientation of the valve; and

*further comprising a valve cover having a block for mounting the flap in contact with the sealing surfaces; wherein the block exerts the force in the upstream direction and wherein the transverse curvature in the flap includes a fixed transverse curvature in the flap in said root end at a location of said root end located between the block and the portion of the of the root end that contacts the sealing surface, and wherein the block has a width that is less than a transverse distance between opposite side edges of the orifice.*

96. (previously presented) The mask of claim 95, wherein the transverse curvature in the flap includes a fixed transverse curvature in the root end of the flap at a location spaced inward from the portion of the root end that contacts the sealing surface.

97-99. (canceled)

100. (previously presented) The mask of claim 95, wherein said cantilevered arrangement of said flexible flap is defined by the flap being supported proximate said root end and the free end being unsupported.

101. (previously presented) The mask of claim 95, wherein said cantilevered arrangement of the flexible flap is defined by said flap being supported by at least said block at or adjacent said root end, and by the free end being unsupported.

102. (previously presented) The mask of claim 95, wherein said cantilevered arrangement of the flexible flap is defined by said flap being supported between said block and the sealing surfaces at the root end, and by the free end being unsupported.

103. (previously presented) The mask of claim 95, wherein the root end includes an outer edge surface, and wherein the sealing surface contacts the root end inward from the outer edge surface.

104. (previously presented) A filter mask that comprises:

- a mask body that is adapted to fit over the nose and mouth of a person; and

- a unidirectional exhalation valve that is mounted to the mask body to enable exhaled air to exit an interior of the mask body during an exhalation, the exhalation defining a downstream direction and an opposite upstream direction, the unidirectional exhalation valve comprising:

  - a cantilevered flexible flap and a cooperating valve seat surrounding a valve orifice;

  - the cantilevered flexible flap defining a root end and a free end at opposite ends of a longitudinal axis of the flap, and two peripheral side edges respectively extending between the root end and the free end; wherein the root end, the free end, and the two side edges have upper and lower surfaces;

  - the valve seat having sealing surfaces that contact the flap along portions of the upstream surface of the root end, the free end, and the peripheral side edges when the fluid valve is closed;

  - the cantilevered flexible flap being mounted in contact with the respective sealing surface of the valve seat at the root end and being freely movable to flex away from the respective sealing surface of the valve seat at the free end and along at least portions of the peripheral side edges when fluid flows through the fluid valve and the fluid valve is open; and

  - wherein the flexible flap comprises a fixed curvature in a direction transverse to the longitudinal axis, the fixed curvature resulting at least in part from a force being applied to said flap in an upstream direction at a position proximate the root end and between the peripheral side edges, the applied force moving the flap upstream at the applied position and thus at least partially imparting the curvature, the curvature resulting in maintaining the flap substantially in contact with the sealing surfaces of the valve seat in the absence of an opening pressure differential across the flap, in any orientation of the valve;



wherein the transverse curvature in the flap includes a fixed transverse curvature in the root end of the flap at a location spaced inward from the portion of the root end that contacts the sealing surface;

wherein the cantilevered arrangement of the flexible flap is defined by said flap being supported proximate the root end, and by said free end being unsupported; and

*further comprising a valve cover having a block for mounting said flap in contact with said sealing surfaces, wherein the block exerts the force in the upstream direction, wherein the transverse curvature in the flap includes a fixed transverse curvature in the flap in the root end at a portion of the root end located between the block and the portion of the of the root end that contacts the sealing surface, and wherein the block has a width that is less than a transverse distance between opposite side edges of the orifice.*

105-107. (canceled)

108. (previously presented) The mask of claim 104, wherein the cantilevered arrangement of the flexible flap is defined by the flap being supported by at least the block at or adjacent the root end, and by the free end being unsupported.

109. (previously presented) The mask of claim 104, wherein the cantilevered arrangement of the flexible flap is defined by the flap being supported between the block and the sealing surfaces at the root end, and by the free end being unsupported.

110. (previously presented) The mask of claim 104, wherein the upper surface of the root end includes an outer edge surface, and wherein the sealing surface contacts the root end inward from the outer edge surface.

111. (currently amended) A filter mask that comprises:

a mask body that is adapted to fit over the nose and mouth of a person; and

a unidirectional exhalation valve that is mounted to the mask body to enable exhaled air to exit an interior of the mask body during an exhalation, the exhalation defining a downstream direction and an opposite upstream direction, the unidirectional exhalation valve comprising:

a cantilevered flexible flap and a cooperating valve seat surrounding a valve orifice; the cantilevered flexible flap defining a supported end and a free end at opposite ends of a longitudinal axis of the flap, and two peripheral side edges respectively extending between the supported end and the free end; wherein the supported end, the free end, and the two side edges include upstream and downstream surfaces;

the valve seat having sealing surfaces that contact the flap along portions of the upstream surfaces of the supported end, the free end, and the peripheral side edges when the fluid valve is closed;

the cantilevered flexible flap being mounted in contact with the respective sealing surface of the valve seat at the supported end and being freely movable to flex away from the respective sealing surface of the valve seat at the free end and along at least portions of the peripheral side edges when fluid flows through the fluid valve and the fluid valve is open;

a valve cover having a block for mounting the flap in contact with the sealing surfaces;

and

wherein the flexible flap comprises a fixed curvature in a direction transverse to the longitudinal axis, *the fixed curvature at least partially resulting from a force being applied to said flap at a position proximate the supported end and between the peripheral side edges, the block exerting the applied force moving the flap upstream at the position and thus at least partially imparting the curvature, the curvature resulting in a biasing of the flap towards the seal surface to enable the free end of the flap to maintain substantial contact with the sealing surfaces* in the absence of an opening pressure differential across the flap, in any orientation of the valve.

112. (previously presented) The mask of claim 111, wherein the force is applied at a location spaced inward from the portion of the of the supported end that contacts the sealing surface.

113. (canceled)

114. (previously presented) The mask of claim 113, wherein the transverse curvature in the flap includes a fixed transverse curvature in the flap in the supported end between the block and the portion of the of the supported end that contacts the sealing surface.

115. (previously presented) The mask of claim 114, wherein the block has a width that is less than a transverse distance between opposite side edges of the orifice.

116. (previously presented) The mask of claim 111, wherein the cantilevered arrangement of the flexible flap is defined by the flap being supported at the supported end and the free end being unsupported.

117. (previously presented) The mask of claim 113, wherein the cantilevered arrangement of the flexible flap is defined by the flap being supported by at least the block at the supported end, and by the free end being unsupported.

118. (previously presented) The mask of claim 113, wherein the cantilevered arrangement of the flexible flap is defined by the flap being supported between the block and the sealing surfaces at the supported end, and by the free end being unsupported.

119. (previously presented) The mask of claim 113, wherein the root end includes an outer edge surface, and wherein said sealing surface contacts said supported end inward from the outer edge surface.

120. (previously presented) A filter mask that comprises:

a mask body that is adapted to fit over the nose and mouth of a person; and

a unidirectional exhalation valve that is mounted to the mask body to enable exhaled air to exit an interior of the mask body during an exhalation, the exhalation defining a downstream direction and an opposite upstream direction, the unidirectional exhalation valve comprising:

a cantilevered flexible flap and a cooperating valve seat surrounding a valve orifice;

the cantilevered flexible flap defining a supported end and a free end at opposite ends of a longitudinal axis of the flap, and two peripheral side edges respectively

extending between the supported end and the free end; wherein the supported end, the free end, and the two side edges include upstream and downstream surfaces;

the valve seat having sealing surfaces that contact the flap along portions of the upstream surfaces of the supported end, the free end, and the peripheral side edges when the fluid valve is closed;

the cantilevered flexible flap being mounted in contact with the respective sealing surface of the valve seat at the supported end and being freely movable to flex away from the respective sealing surface of the valve seat at the free end and along at least portions of the peripheral side edges when fluid flows through the fluid valve and the fluid valve is open; and

means for mounting the flexible flap to the valve seat wherein the mounting means creates a fixed curvature in the flap in a direction transverse to the longitudinal axis, the curvature resulting in a biasing of the flap towards the seal surface to enable the free end of the flap to maintain substantial contact with the sealing surfaces in the absence of an opening pressure differential across the flap, in any orientation of the valve;

*wherein the mounting means includes a block that exerts a force in the upstream direction to the flap's downstream surface at a position proximate the supported end and between the peripheral side edges, the applied force moving the flap upstream at the exerted position and thus at least partially imparting the curvature.*

121. (canceled)

122. (currently amended) A filtering face mask that comprises:

(a) a mask body that is adapted to fit over the nose and mouth of a person and that includes a layer of filter media; and

(b) a unidirectional exhalation valve that is attached to the mask body, which unidirectional exhalation valve comprises:

(i) a valve seat that comprises an orifice and a seal surface; and

(ii) a single flexible flap that has a stationary portion and only one free portion and a peripheral edge that includes stationary and free segments, the stationary segment of the peripheral edge being associated with the stationary portion of the flexible flap so

as to remain in substantially the same position during an exhalation, and the free segment of the peripheral edge being associated with the one free portion of the flexible flap so as to be movable during an exhalation, the single flexible flap also having a longitudinal dimension that is defined by a line extending from the stationary segment of the flap to the free segment;

*wherein the unidirectional exhalation valve is positioned on the mask body and the single flexible flap is arranged on the valve seat such that the free segment of the peripheral edge is disposed beneath the stationary segment when the mask body is appropriately positioned on a wearer's face, and wherein the flexible flap is mounted on the valve seat non-centrally relative to the valve seat orifice and the longitudinal dimension, there being a force exerted upon the flap in the upstream direction relative to fluid flow through the valve to at least partially impart a curvature to the flap when in a closed position, which curvature extends at least transversely to the longitudinal dimension, the free portion of the flexible flap being in contact with the seal surface when a wearer of the mask is neither inhaling nor exhaling and being free to be lifted from the seal surface during an exhalation.*

123. (previously presented) The filtering mask of claim 122, wherein the transverse curvature is at least partially imparted to the flexible flap by virtue of its mounting on the valve seat.

124. (previously presented) The filtering face mask of claim 123, wherein the flexible flap is trapped between first and second confronting surfaces of first and second structural members, respectively.

125. (canceled)

126. (currently amended) The filtering mask of claim 124~~5~~, wherein the first structural member is associated with the valve seat and the second structural member is associated with a valve cover.

127. (previously presented) The filtering face mask of claim 123, wherein the valve seat surface is substantially flat in a region wherein the free portion of the flap makes contact with the seal surface when the valve is in its closed position.

128. (previously presented) The filtering face mask of claim 123, wherein the mounting of the flexible flap with respect to the valve seat also imparts a longitudinal curvature to at least the central section of the flexible flap.

129. (previously presented) The filtering face mask of claim 122, wherein the valve seat orifice includes a plurality of ports that are separated by structural members that extend across the orifice.